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Introduction to the Scuttle Flies Fauna (Diptera: Phoridae) of Fars Province, Iran

S. SADEGHI, G. WEBER, M. FALLAHZADEH & A.F. DOUSTI

A b s t r a c t : Fars province in the south of Iran was surveyed for scuttle flies (Diptera: Phoridae) during years 2009 and 2011. A total of 8 species representing 4 genera belonging to subfamily Metopininae were collected and identified. Of these, 3 genera and 7 species are new records for the fauna of Iran. Locality and date of collection, host(s) if known and distribution data for each species are provided.

K e y w o r d s : Fars province, Iran, Fauna, Scuttle flies, Diptera, Phoridae.

Introduction

The scuttle flies (Diptera: Phoridae) comprise one of the largest and most abundant families of Brachycera with over 3700 species in more than 260 genera known throughout the world (DISNEY et al. 2010). The Iranian fauna of Phoridae is very poorly known. So far, only 5 species *Megaselia halterata* (WOOD 1910), *M. scalaris* (LOEW 1866), *M. coaetanea* SCHMITZ 1929, *M. barzegarae* DISNEY 2012 and *M. kermanshahensis* DISNEY 2012 have been known from Iran (TALEBI et al. 2003, 2006, ZAMANI et al. 2005, GHAHARI & DISNEY 2007, HAYAT et al. 2008, DISNEY et al. 2012). The objectives of the present study were to provide detailed information on the distribution of Phoridae in Fars province and to contribute to the knowledge of the Iranian fauna.

Materials and Methods

The scuttle flies specimens were captured by Malaise-trap, light trap and yellow pan trap in Fars province during 2009 and 2011. The Fars province is located in southern Iran between 27°01′ and 31°51′N and between 50°27′ and 55°45′E, covering an area of 125,000 km². The climate of the province is arid to semiarid. All trapped specimens were preserved in alcohol, but identification has been based on slide-mounted specimens (DISNEY 1994, 2001). Voucher specimens of all the species are deposited in the Department of Entomology, College of Agriculture, Islamic Azad University, Jahrom branch. The taxonomic arrangement is adapted from DISNEY (1994, 1998, 2006, 2008b).

Results

In a total of 4 genera and 8 species belonging to the subfamily Metopininae were collected in Fars province. Of these, 3 genera and 7 species are reported for the first time for Iranian fauna. The genera and species are listed in alphabetic order.

Subfamily M e t o p i n i n a e

Genus *A r a b i p h o r a* DISNEY 2006

Arabiphora tenuifemorata DISNEY 2006

S p e c i m e n s e x a m i n e d : 2♂♂: Jahrom; 28°50′ N 53°56′ E, 1020 m, 11 June. 2011, Light trap in citrus (Rutaceae) and date palm garden [*Phoenix dactylifera* L. (Arecaceae)].

D i s t r i b u t i o n : Arabia (Yemen) (DISNEY 2006). New record for the fauna of Iran.

Genus *C h o n o c e p h a l u s* WANDOLLECK 1898

Chonocephalus heymonsi STOBBE 1913

S p e c i m e n s e x a m i n e d : 4♂♂: Jahrom; 28°49′ N 53°55′ E, 1038 m, 11 September 2011, Light trap in date palm garden [*Phoenix dactylifera* L. (Arecaceae)].

H o s t : The female caught on the edible paddy straw mushroom *Volvariella* (Plutaceae) was probably ovipositing on an over ripe sporophore; as was the case with the females recorded on rotting *Termitomyces* (Amanitaceae) on a termite mound (DISNEY 1994). Also, it has been reared from bread fruit (*Artocarpus altilis* (PARKINSON) FOSBERG, Moraceae) (DISNEY & SINCLAIR 2008). A female from Costa Rica attributed to this species, has been reported from a colony of the termite *Coptotermes niger* (BRUES 1925). The female reported from a refuse deposit of the army ant *Eciton burchellii* and the other female from the detritus from a tree hole (DISNEY & RETTENMEYER 2007) further suggest that a range of decaying organic materials are exploited by this species (DISNEY 2008c).

D i s t r i b u t i o n : This species is the ultimate tramp species, having been recorded from every biogeographic region (except the Antarctic), but it was probably originally native to mainland Africa south of the Sahara and has been transported across the world by humans (DISNEY 2002, 2005, 2008c, DISNEY & SINCLAIR 2008). New record for the fauna of Iran.

Genus *M e g a s e l i a* RONDANI 1856

Megaselia daemon BRIDAROLLIA 1951

S p e c i m e n s e x a m i n e d : 1♂: Jahrom; 28°53′ N 53°54′ E, 1009 m, 30 July 2009, Malaise-trap in alfalfa field [*Medicago sativa* L. (Fabaceae)].

D i s t r i b u t i o n : This species is widely distributed in Africa, Arabia (DISNEY 2008b, 2009). New record for the fauna of Iran.

***Megaselia rufipes* (MEIGEN 1804)**

S p e c i m e n s e x a m i n e d : 5♂♂ Jahrom; 28°50′ N 53°55′ E, 1040 m, 10 May 2011, Malaise-trap in citrus garden (Rutaceae).

H o s t : The larvae feed on a broad spectrum of decaying organic materials that includes rotting plants, dung, decaying fungi, dead invertebrates and vertebrate carrion, including human corpses (DISNEY 1994, 2009, DISNEY et al. 2010). They occasionally exploit human foods, such as cheese and rice-based pre-cooked meals. Adults visit a variety of flowers and fungus spores have been found in the crops of females (DISNEY 1994, 2009).

D i s t r i b u t i o n : Arabia, Europe, Holarctic, South Atlantic, North Atlantic Islands, Canary Islands (DISNEY et al. 2010). This Holarctic species has been carried around the world by man as far as Tasmania and New Zealand (DISNEY 2003, 2009, DISNEY et al. 2010) and the remote islands of the South Atlantic (JONES et al. 2003, HÄNEL & DISNEY 2006). New record for the fauna of Iran.

***Megaselia scalaris* (LOEW 1866)**

S p e c i m e n s e x a m i n e d : 1♂: Jahrom; 28°50′ N 53°54′ E, 1018 m, 26 May 2011, Malaise-trap in alfalfa field [*Medicago sativa* L. (Fabaceae)].

H o s t : The larvae breed in a wider range of decaying organic materials than any other insect, occasionally they are facultative parasitoids of invertebrates, probably when they are already debilitated, and are also facultative parasites (myiasis agents) of vertebrates, including man. The large literature on this species has recently been reviewed (DISNEY 2008a).

D i s t r i b u t i o n : Antarctic, Arabia, Austria, North Africa, North America, southern Europe, Canary Islands (DISNEY 2008a, b, DISNEY et al. 2010). This is a tramp species that is widely transported around the world by man (NICKOLLS & DISNEY 2001) to all warm parts of the world and to temperate regions in situations where it can avoid frosts (such as indoors) (DISNEY 2009).

***Megaselia subfuscipes* SCHMITZ 1935**

S p e c i m e n s e x a m i n e d : 1♂: Jahrom; 28°53′ N 53°54′ E, 1009 m, 15 June 2009, Malaise-trap in alfalfa field [*Medicago sativa* L. (Fabaceae)].

H o s t : BUCK (1997) caught one specimen in a trap baited with pig kidney.

D i s t r i b u t i o n : Europe, Canary Islands (DISNEY 2000, DISNEY et al. 2010). New record for the fauna of Iran.

***Megaselia xanthozona* (STROBL 1892)**

S p e c i m e n s e x a m i n e d : 4♂♂: Jahrom; 28°50′ N 53°53′ E, 1028 m, 29 April 2011, Malaise-trap in citrus (Rutaceae) and date plam garden [*Phoenix dactylifera* L. (Arecaceae)]; 3♂♂: Jahrom; 28°53′ N 53°54′ E, 1009 m, 30 July 2009, Malaise-trap in alfalfa field [*Medicago sativa* L. (Fabaceae)].

H o s t : Adults have been reported visiting flowers of *Gypsophila hispanica* (Caryophyllaceae) in Spain (DISNEY 1994, 2009).

D i s t r i b u t i o n : Arabia, Europe, Israel, North Africa (DISNEY 2008b, 2009). New record for the fauna of Iran.

Genus *Metopina* MACQUART 1835

Metopina heselhausi SCHMITZ 1914

Specimens examined: 4♂♂: Jahrom; 28°53′ N 53°54′ E, 1009 m, 30 July 2009, Malaise-trap in alfalfa field [*Medicago sativa* L. (Fabaceae)]; 2♂♂: Jahrom (Taghi Abad); 28°54′ N 53°53′ E, 996 m, 25 June 2011, yelow pan trap in alfalfa field [*Medicago sativa* L. (Fabaceae)].

Host: Adults have been recorded visiting the flowers of *Taraxacum officinale* (Asteraceae), *Reseda lutea* (Resedaceae) and *Potentilla anserina* (Rosaceae); and also on meat baits (DISNEY et al. 2010).

Distribution: Afro-tropical (Africa), Palearctic, Arabia, Canary Islands (DISNEY 2006, DISNEY et al. 2010). New record for the fauna of Iran.

Discussion

Four genera and 8 species of scuttle flies are reported from Iran in the present study. Among them, 3 genera [*Arabiphora* DISNEY 2006, *Chonocephalus* WANDOLLECK 1898 and *Metopina* MACQUART 1835] and 7 species [*Arabiphora tenuifemorata* DISNEY 2006, *Chonocephalus heymonsi* STOBBE 1913, *Megaselia apozona* SCHMITZ 1936, *M. daemon* BRIDAROLLIA 1951, *M. rufipes* (MEIGEN 1804), *M. xanthozona* (STROBL 1892) and *Metopina heselhausi* SCHMITZ 1914] are newly recorded from Iran. Despite being a large country with various geographical regions the fauna of Iranian Phoridae is very poorly known. The Phoridae genera and species of Iran will be similar to those found in Arabia (DISNEY 2006, DISNEY 2008b, DISNEY 2009), but because Iran is a large country with a greater diversity of habitat and climate more genera and species than the found in Arabia probably occur there. We expect that a large number of species remain to be discovered though many will already be described.

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Zusammenfassung

Buckelfliegen (Diptera: Phoridae) der Provinz Fars im Süden des Irans wurden in den Jahren 2009 und 2011 erfasst. Insgesamt wurden 8 Arten aus 4 Gattungen der Unterfamilie Metopininae gesammelt und bestimmt. 3 Gattungen und 7 Arten sind neu für die Fauna des Iran. Für jede Art werden Funddaten, Ernährungsweise soweit bekannt und Verbreitung angegeben.

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Authors' addresses:

Solmaz SADEGHI
Department of Entomology
Jahrom Branch, Islamic Azad University
Jahrom, Iran
P.O. Box: 74135-355
E-mail: sadeghi.s1388@yahoo.com

Dr. Gisela WEBER
Rebenring 47,
D-38106 Braunschweig, Germany
E-mail: gisela.wb@gmx.de

Dr. Majid FALLAHZADEH (corresponding author)
Department of Entomology
Jahrom Branch, Islamic Azad University
Jahrom, Iran
E-mail: mfalahm@yahoo.com

Dr. Abu Fazel DOUSTI
Department of Entomology
Jahrom Branch, Islamic Azad University
Jahrom, Iran
E-mail: fdousti@yahoo.com